




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,974	09/05/2003	Yasuaki Horio	031063	5674
38834	7590	03/02/2005	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036			TERESINSKI, JOHN	
			ART UNIT	PAPER NUMBER
			2858	

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s) 	
	10/654,974	HORIO ET AL	
	Examiner	Art Unit	
	John Teresinski	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-3 and 6-8 is/are rejected.
 7) ☒ Claim(s) 4, 5, 9 and 10 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/26/04, 9/5/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because for exceeding 150 words in length.

Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: pages 10 and 11 refer to numbers 1 and 2, which are not shown in the drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,005,364 to Harrington.

Regarding claim 1, Harrington discloses a first counter (46) which counts reference clocks during one cycle of a signal to be measured (column 3 lines 43-62), a time difference detection circuit which detects time difference between the signal to be measured and the reference clock (column 5 lines 4-40), a time expansion circuit which expands an output pulse width of the time difference detection circuit by a given magnification (column 4 lines 1-22), and a second counter which counts the reference clocks during the pulse width which is expanded by the time expansion circuit (column 7 lines 1-6), wherein the frequency of the signal to be measured is obtained based on count values of the first and second counters (column 3 lines 8-35).

Regarding claim 2, Harrington discloses the count value of the second counter is divided by the given magnification with which the time expansion circuit expands the pulse width, and a result of the division is added to the count value of the first counter so as to obtain the frequency of the signal to be measured (column 7 lines 1-7).

Regarding claim 3, Harrington discloses the time difference detection circuit outputs a pulse signal having the pulse width from a point of time that a level of the signal to be measured is changed to a point of time that a level of the reference clock is changed (column 5 lines 5-40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington in view of U.S. Patent No. 6,029,524 to Klauder et al..

Regarding claim 6, Harrington disclose the frequency measuring circuit as disclosed above but does not teach counting reference clock signals during one cycle of a resonant pressure sensor. Klauder et al. disclose a redundant pressure sensor having a frequency measuring circuit to counting reference clock signals during one cycle of a resonant pressure sensor (column 2 lines 28-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include counting reference clock signals of a resonant pressure sensor as taught by Klauder et al. into Harrington for the purpose of accurately diagnosing sensors affected by span shifts.

Regarding claims 7 and 8 see claims 2 and 3 above.

Allowable Subject Matter

Claims 4,5,9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Regarding claims 4 and 9:

The primary reason for the allowance of claims 4 and 9 is the inclusion of time expansion circuit includes a first time constant circuit which is charged with a given voltage, a second time constant circuit which has a time constant larger than a time constant of the first time constant

Art Unit: 2858

circuit and is charged with a given voltage, a comparator which compares output voltages of the first and second time constant circuits, and a gate circuit to which an output of the comparator and a signal relevant to a start signal are inputted and which outputs a signal relevant to an output of the comparator during a pulse width of the signal relevant to the start signal. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Regarding claims 5 and 10:

The primary reason for the allowance of claims 5 and 10 is the inclusion of an operational amplifier which connects a voltage dividing point of the first voltage dividing circuit with an inverted input terminal and connects a voltage dividing point of the second voltage dividing circuit to a non-inverted input terminal as a fixed threshold voltage thus forming an integrator, and a comparator which connects an output of the operational amplifier with an inverted input terminal and connects a voltage dividing point of the second voltage dividing circuit to a non-inverted input terminal as a fixed threshold voltage. It is these features found in the claim, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

Art Unit: 2858

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Teresinski whose telephone number is (571) 272-2235. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JT
JT

February 24, 2005


ANJAN DEB
PRIMARY EXAMINER